Electronic TUBE

6SQ7 - 12SQ7
Description and Rating
DUPLEX-DIODE TRIODE

The 6SQ7 and 12SQ7 are metal duplex-diode high-mu triodes which are identical except for heater ratings. Each type is intended primarily for use as a combined detector, amplifier, and automatic-volume-control tube in radio receivers. The triode section incorporates a high amplification factor and is capable of providing a relatively large undistorted output voltage from a very small input signal.

GENERAL

Cathode - Coated Unipotential

	6SQ7	12SQ7	
Heater Voltage, A-C or D-C	6.3	12.6	Volts
Heater Current	0.3	0.15	Ampere

Envelope - MT-8, Metal Shell
Base - B8-21, Small Wafer Octal 8-Pin
Mounting Position - Any

Direct Interelectrode Capacitances *

Grid to Diode 1 Plate, maximum	0.03	μμf
Diode Input, Each Section	2.6	μμf

MAXIMUM RATINGS

DESIGN-CENTER VALUES

Plate Voltage	300	Volts
Positive D-C Grid Voltage	0	Volts
Plate Dissipation	0.5	Watt
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	90	Volts
Heater Negative with Respect to Cathode	90	Volts
Diode Current for Continuous Operation, Each Diode	1.0	Milliampere

CHARACTERISTICS AND TYPICAL OPERATION

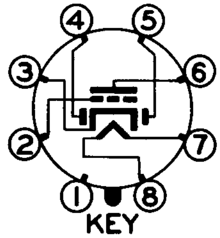
CLASS A_1 AMPLIFIER

Plate Voltage	100	250	Volts
Grid Voltage	-1	-2	Volts
Amplification Factor	100	100	
Plate Resistance, approximate	110000	85000	Ohms
Transconductance	925	1175	Micromhos
Plate Current	0.5	1.1	Milliamperes

Average Diode Current, Each Diode
With 10 Volts D-C Applied . . . 2.0 . . . Milliamperes

* *With pin 1 connected to pin 3.*

BASING DIAGRAM

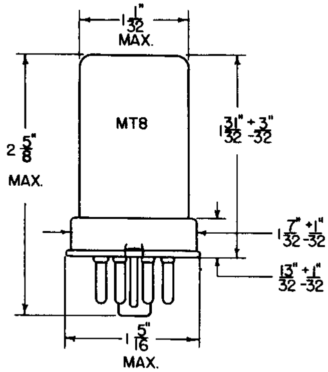


RTMA 8Q
BOTTOM VIEW

TERMINAL CONNECTIONS

Pin 1 - Shell
Pin 2 - Triode Grid
Pin 3 - Cathode
Pin 4 - Diode Number 2 Plate
Pin 5 - Diode Number 1 Plate
Pin 6 - Triode Plate
Pin 7 - Heater
Pin 8 - Heater

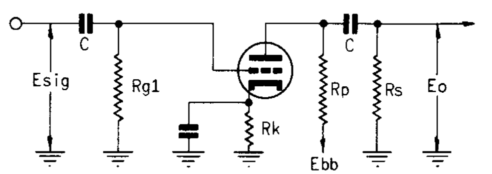
PHYSICAL DIMENSIONS



RTMA 8-1

CLASS A RESISTANCE-COUPLED AMPLIFIER

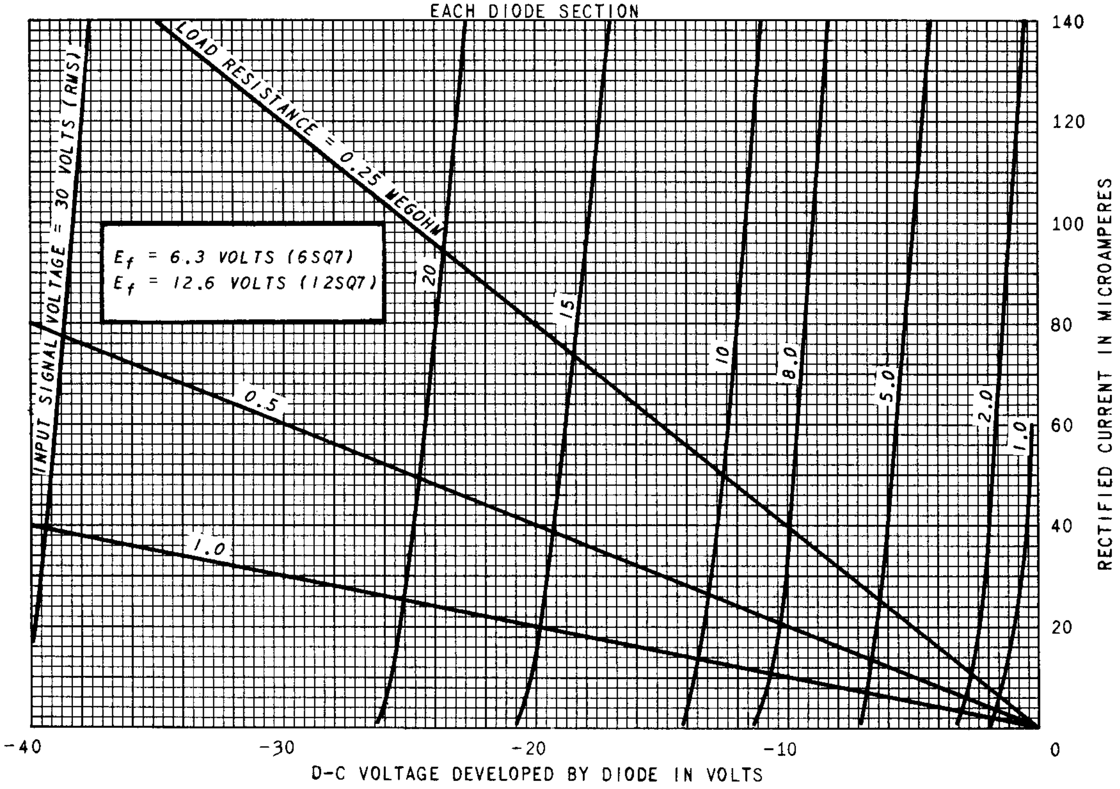
Rp Meg.	Rs Meg.	Rg1 Meg.	Ebb = 90 Volts			Ebb = 180 Volts			Ebb = 300 Volts		
			Rk	Gain	Eo	Rk	Gain	Eo	Rk	Gain	Eo
0.10	0.10	0.1	4300	22	5.0	2400	29	15	2000	31	28
0.10	0.24	0.1	4700	27	7.0	2700	35	20	2200	38	37
0.24	0.24	0.1	7500	31	7.5	4300	42	20	3300	46	36
0.24	0.51	0.1	8200	40	10	4700	50	26	3900	52	50
0.51	0.51	0.1	13000	39	9.5	7500	53	24	5600	58	47
0.51	1.0	0.1	15000	43	11	8200	58	31	6200	62	56
0.24	0.24	10	0	39	4.5	0	45	19	0	49	38
0.24	0.51	10	0	45	6.5	0	52	24	0	57	48
0.51	0.51	10	0	48	7.0	0	59	22	0	62	42
0.51	1.0	10	0	52	8.5	0	62	25	0	66	55



Note: Coupling capacitors (C) should be selected to give desired frequency response. Rk should be adequately by-passed.

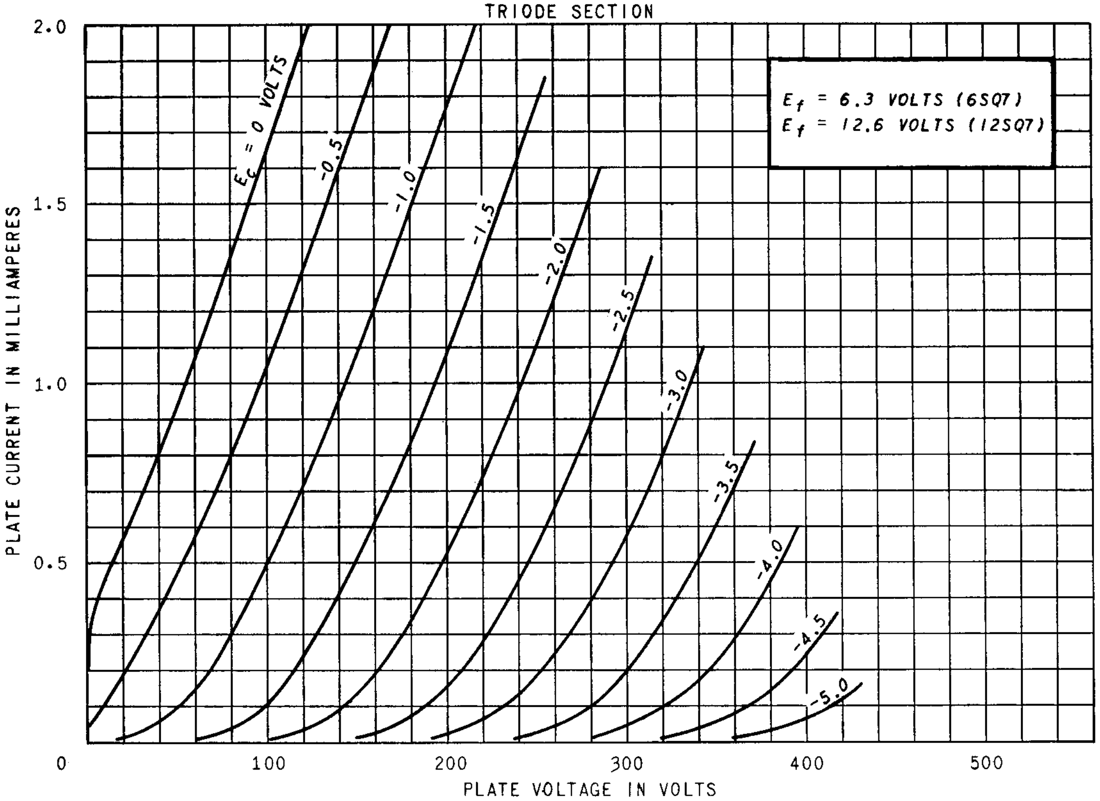
Notes: 1. Eo is maximum RMS voltage output for five percent (5%) total harmonic distortion. 2. Gain measured at 2.0 volts RMS output. 3. For zero-bias data, generator impedance is negligible.

OPERATION CHARACTERISTICS



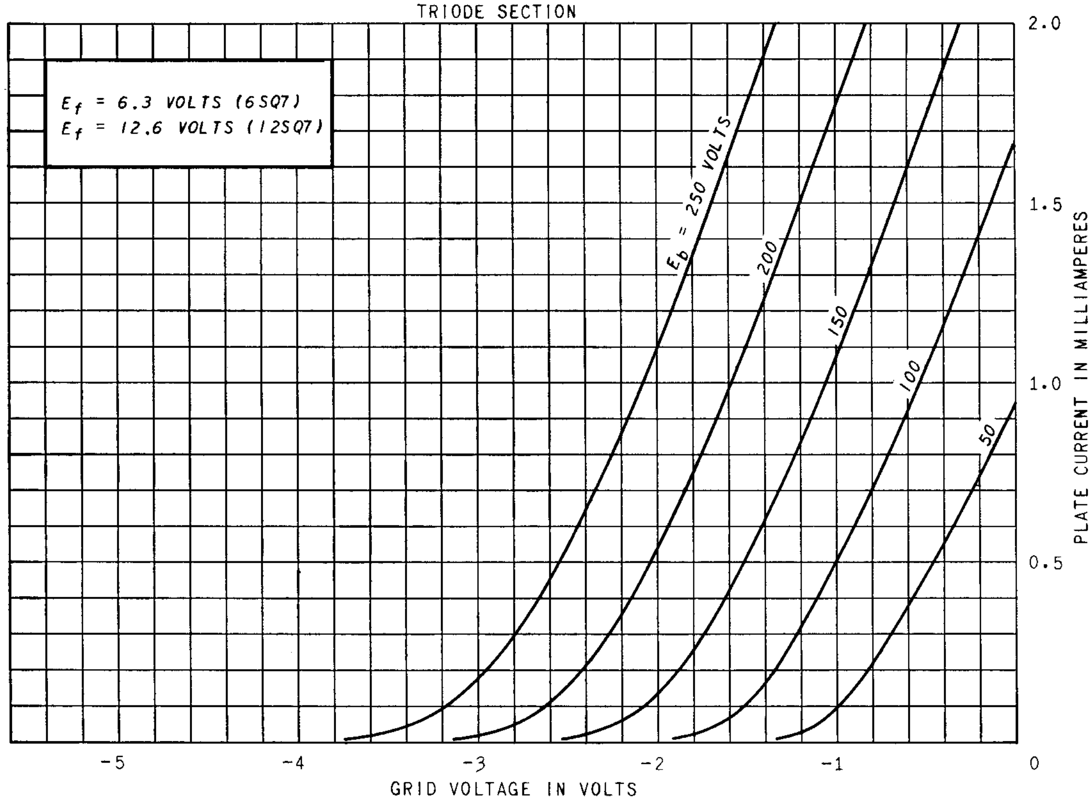
AVERAGE PLATE CHARACTERISTICS

TRIODE SECTION

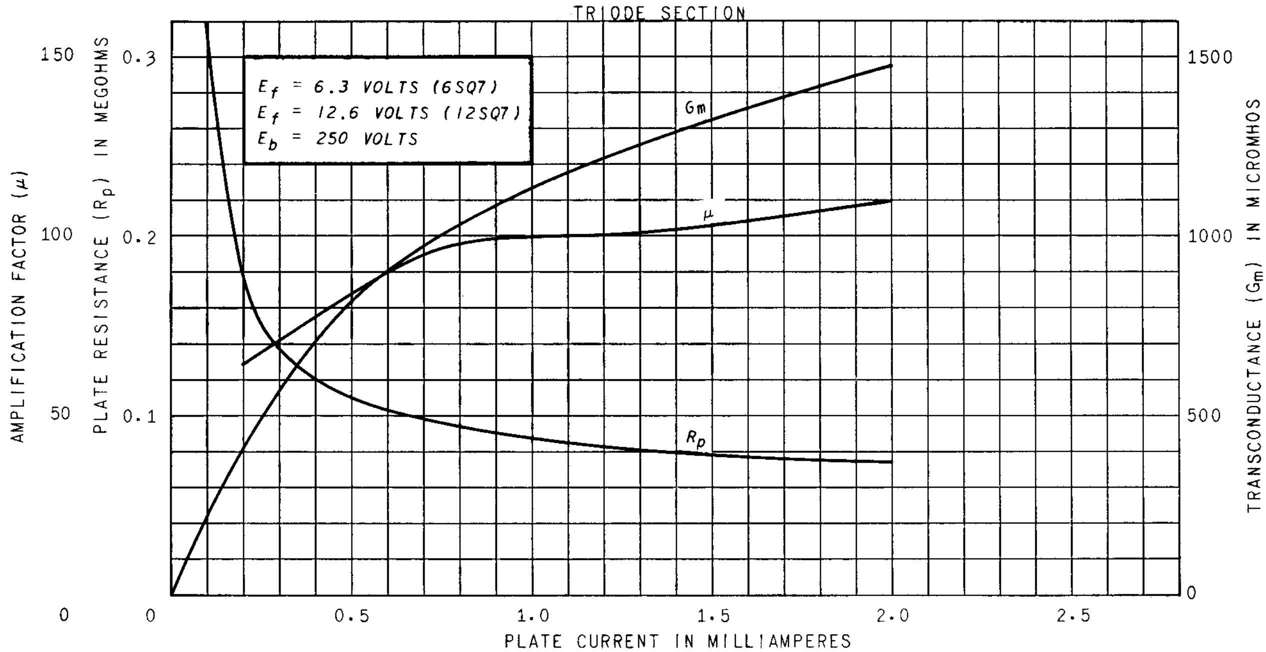


AVERAGE TRANSFER CHARACTERISTICS

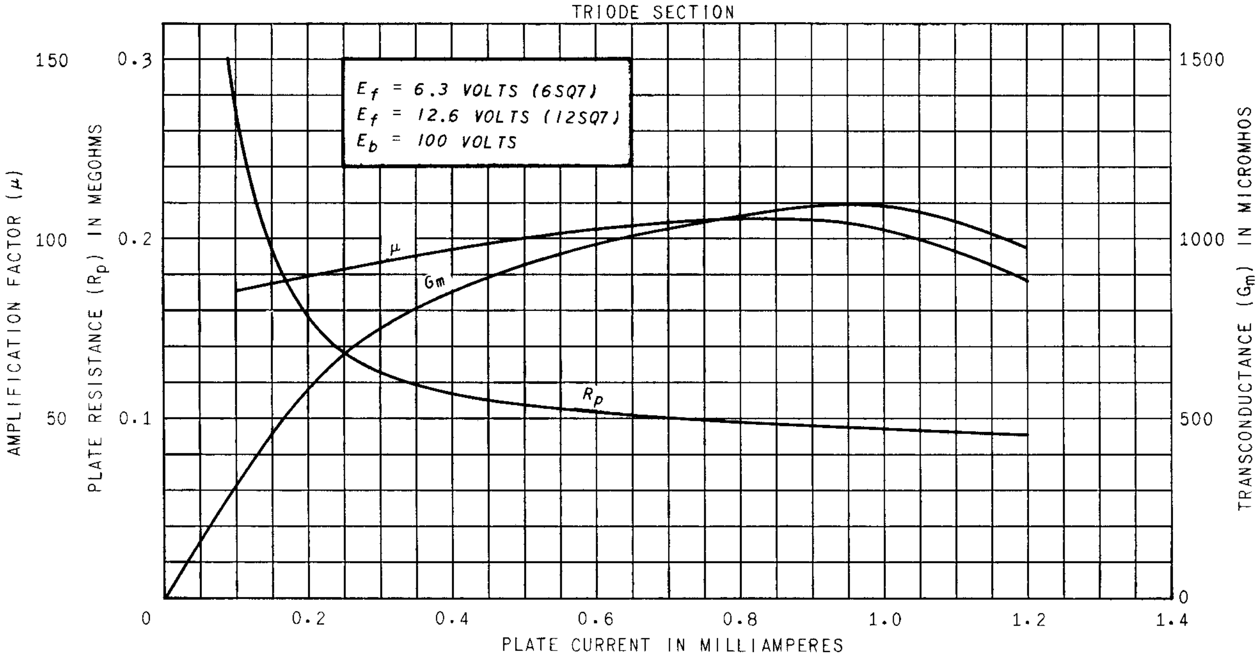
TRIODE SECTION



AVERAGE CHARACTERISTICS



AVERAGE CHARACTERISTICS



TUBE DEPARTMENT

GENERAL ELECTRIC

Schenectady 5, N. Y.